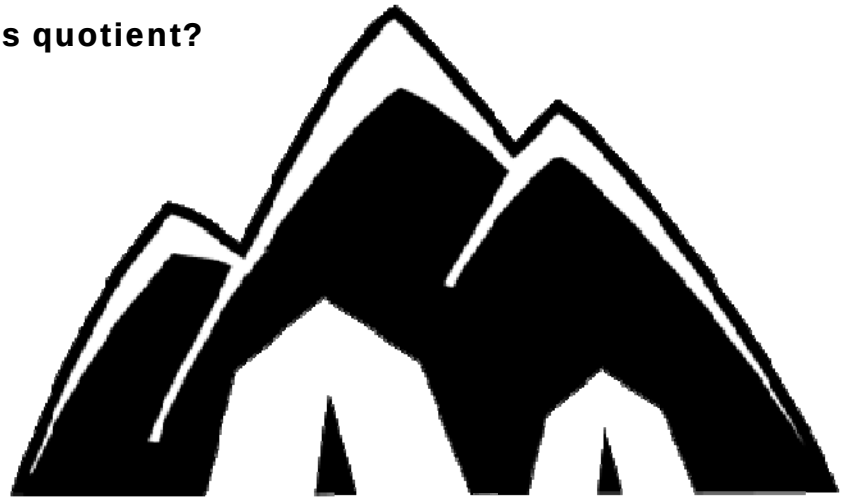
Name _____ Date _____

Applying the Remainder Theorem- Step-by-Step Lesson

What is the remainder of this quotient?

$(4x^2 - 10x - 4) \div (x - 2)$



Explanation:

In algebra, the remainder theorem is an application of polynomial long division. It states that the remainder of a polynomial f(x) divided by a linear divisor (x – c) is equal to f(c).

We know the remainder after dividing by x - c we don't need to do any division. We have to just calculate f(c).

$(4x^2 - 10x - 4) \div (x - 2)$

We will calculate f(2). And put 2 into all slots and solve:

$= 4(2)^2 - 10(2) - 4$

$= 4 \times 4 - 20 - 4$

$= 16 - 20 - 4$

$= -8$

So, the answer is -8.